

No. CE/Admn/PLA/22362/2012

Office of the Chief Engineer
PWD Administration
Thiruvananthapuram
Dt. 07.9.2015

CIRCULAR

Sub: Implementation of guidelines in the PWD Quality Control Manual and PWD Laboratory Manual

Ref: 1. G.O(Rt) No.1339/2015/PWD dated 10.9.2015
2. G.O(Rt) No.1346/2015/PWD dated 11.9.2015

Government vide orders cited have approved the Quality Control(QC) Manual and Laboratory Manual for Public works Department. The Quality Control Manual is intended to evolve a uniform procedure for monitoring the three tier quality control process envisaged in clause 2401 of the Revised PWD Manual 2012. The Laboratory Manual gives guidance to the Engineers and technical staff in the QC laboratories and the field Engineers on the procedure to carry out QC tests.

The Chief Engineers' Committee in the meeting held on 30.9.2015 discussed in detail the mode of implementation of the Quality Control Manual and the Laboratory Manual. The Committee took the view that since the documents are instrumental in ensuring quality of public works, it should be implemented forthwith without waiting for the hard copies. The Committee decided to officially publish soft copies of the approved QC Manual and Laboratory Manual in the PWD web portal to enable the field officers and Contractors to acquaint with the contents. The Committee further decided to issue guidelines for implementation so that there is uniformity in the QC process being followed in the department.

Based on the decisions of the Chief Engineer's Committee, the following directions are issued for strict compliance.

1. All field officers and staff engaged in execution, quality control and processing of bills shall familiarize themselves with the relevant provisions of the said documents.
2. The provisions of the Quality Control Manual regarding first tier QC are applicable to all works costing above Rs.15 lakhs, tenders of which are to be invited from 15.10.2015. However for second tier QC tests, there is no such monetary limit.
3. Though the second tier quality control is intended to be done on a random basis, QC wing shall inspect maximum number of works including original, maintenance and repair works and conduct QC tests as per recommended frequency in the QC Manual.
4. For projects costing above Rs.15 lakhs, 1% of the project cost shall be included in the detailed estimate for meeting the expenses related to second tier quality control.
5. Sampling, testing and recording test results shall be done as detailed in the QC Manual and the QC Laboratory Manual.
6. The QC test results in the first and second tier tests shall be forwarded to the Assistant Executive Engineer and Executive Engineer in charge of execution through e mail. The hard copy shall also be forwarded simultaneously

7. Executive Engineers shall evaluate the test results, issue instructions for rectification and certify the rectifications so done, as detailed in the QC Manual. Payment for works where rectification is necessitated shall be made only after the above certification.
8. Responsibilities related to quality control are vested with the Contractor and officers in charge of projects and QC laboratory including Overseer, Assistant Engineer, Assistant Executive Engineer and Executive Engineer. Clause 10 details the responsibilities of field officers and clause 11 that of officers of the QC wing. The responsibilities shall be fulfilled by each officer. Officers evading the responsibilities listed shall face disciplinary action.
9. Intimation to the QC wing shall be made by the Agreement Authority and the Assistant Engineer in charge of the project as detailed under clause 8. Disciplinary action will be initiated against officers who do not report the details in time.
10. Quality Control Register maintained in Section office shall be verified by the Assistant Executive Engineer frequently to ensure compliance of the QC process.
11. QC Manual requires that non compliance of instructions regarding quality control shall be recorded in Work spot order book by the Overseer and Assistant Engineer. The inspecting officers are also required to record their observations regarding quality control in Work spot order book. As per clause 2105 of Revised PWD Manual, Work spot order book has to be maintained for all works exceeding T.S. powers of Assistant Executive Engineer in the form prescribed in Appendix 2100B. Hence maintenance of Work spot order book shall be compulsory at the said project sites from 15.10.2015.
12. The checklists under Appendix III, IV, V and VI shall be prepared by the Overseer supervising the work during execution of the relevant item and submitted to the Assistant Engineer within one week from the date of execution. The same shall be submitted to the Executive Engineer forthwith after scrutiny by the Assistant Engineer and Assistant Executive Engineer. Checklists under Appendix I and II shall be forwarded along with the bills. No bills shall be passed without thorough evaluation of the checklists by the Executive Engineer.
13. The Chief Engineer, Buildings shall initiate action to develop a module for Quality Control in PRICE software. All test results in first and second tier shall then be uploaded in the module. Photographs of sampling/testing as required in the QC Manual shall also be uploaded in the module. The entire quality monitoring process shall be through PRICE software once the module is developed.
14. Till the module is developed, the photographs of sampling/testing in the field laboratory related to the first tier shall be forwarded by the Assistant Engineer to the Assistant Executive Engineer and Executive Engineer by e-mail on the next day of sampling/testing. For second tier tests, this shall be done by Assistant Engineer of QC laboratory, who shall forward the photograph of sampling on the next day to the Executive Engineer, QC.
15. Chief Engineer, Buildings, as Convener of the Technical Committee will initiate action to prepare the list of officers to be empanelled for the third tier Quality Control ie., the Technical Audit envisaged under clause 2406 of the Revised PWD Manual, in consultation with the Chief Engineer, Designs. The panel shall consist of experts in the field of engineering relevant to the project to be audited. The list so prepared shall be submitted to the Chief Engineer's Committee for evaluation and recommendation to Government for approval.
16. Technical Audit shall be compulsory for all projects costing above Rs.5 crores which are tendered from 15.10.2015.

The introduction of QC Manual and its implementation necessitates providing additional information to the intending bidders. Hence all tendering officers are directed to include the following additional conditions in the Notice Inviting Tender (NIT) to enable the bidders to submit their offer considering their additional responsibilities and also the expenses involved for QC tests.

1. Quality Control for the various items in this project shall be governed by the provisions of PWD Quality Control (QC) Manual approved vide G.O(Rt) No. 1339/2015/PWD dated 10.9.2015 and the PWD Laboratory Manual approved vide G.O(Rt) No.1346/2015/PWD dated 11.9.2015 and published in the PWD web portal.
2. The intending bidders are expected to familiarize with the contents of the QC Manual so published before participating in the bid.
3. Technical Audit as envisaged in clause 2406 shall be carried out for the project. The agency entrusted shall extend full cooperation for carrying out the Technical Audit.
4. The bidder whose tender is finally approved is bound to post technical personnel who are well versed with the quality control tests and other guidelines stipulated in the QC Manual.
5. For projects costing more than Rs.200 lakhs, the entrusted agency shall establish site laboratories with required facilities.
6. Primary responsibility for ensuring quality control in each item of work in the project shall be vested with the agency entrusted with the project
7. The entrusted agency shall conduct first tier quality control tests for all items of work at the site laboratory /approved laboratory as per procedure stipulated in the Manuals at his own expense.
8. The agency shall rectify all defects identified during the first and second tier QC tests and during the Technical Audit (third tier)
9. Wherever specified, the entrusted agency shall also obtain Manufacturer's Test Certificate from the manufacturer/dealer and submit the same before executing the items listed in such certificates.
10. The rates quoted by the bidders shall include all expenses for carrying out the first tier quality control tests. Expenses for third party tests detailed in clause 7.4 of the Introduction in the QC Manual, if required, shall also be borne by the agency entrusted with the project.

The following items shall be appended to the agreement conditions while executing agreement for a project tendered on or after 15.10.2015.

1. Quality Control for the various items in the project shall be governed by the provisions of PWD Quality Control(QC) Manual approved vide G.O(Rt) No. 1339/2015/PWD dated 10.9.2015 and the PWD Laboratory Manual approved vide G.O(Rt) No.1346/2015/PWD dated 11.9.2015 and published in the PWD web portal.
2. The contractor shall post technical personnel who are well versed with the guidelines for quality control tests stipulated in the QC Manual.
3. The contractor should establish site laboratories with facility for testing as per guidelines in the QC Manual.(for projects exceeding Rs.200 lakhs)
4. Primary responsibility for ensuring quality control in each item of work in the project shall be vested with the contractor

5. The contractor cannot evade from the responsibility of ensuring quality in the items of work done on the plea that he does not possess sufficient technical knowledge or that the works done are supervised by the departmental officers.
6. The contractor shall comply with the instructions regarding quality related matters issued by the departmental officers in charge of the project.
7. Non-compliance of instructions issued at site or non compliance to specification requirements affecting the desired level of quality will result in termination of the contract under risk and cost and penal action as stipulated in the Rules of Registration of Contractors.
8. Contractor shall conduct first tier quality control tests for all items of work at the site laboratory /approved laboratory at his own expense. Contractor shall sign the test reports so obtained before submitting to the Assistant Engineer.
9. Contractor shall obtain and submit Manufacturer's Test Certificate before executing items listed in such certificates. He shall record the certificate detailed in the QC Manual below the Manufacturers test certificate and affix his signature with date and name seal.
10. Contractor shall be responsible for the genuineness of the Manufacturer's Test Certificate obtained and submitted by him.
11. Contractor shall extend cooperation to the officers of Quality Control wing for taking samples, curing and keeping them in safe custody whenever required. He shall issue acknowledgement for the samples so kept under his safe custody.
12. Contractor shall also extend cooperation to the department in carrying out the Technical Audit(third tier) for projects, cost of which exceeds Rs.5 crores.
13. The Contractor is bound to carry out rectification works at his own cost, if results obtained during quality control tests either in the first-tier or second-tier do not comply with the standards. He shall also carry out rectification works, if any pointed out during technical audit done after completion of work.
14. The decision of the Executive Engineer regarding compliance of test results and rectification works to be done shall be final and binding on the contractor.
15. Payment for works which are to be redone or rectified will be made only after the Executive Engineer after inspection certifies in writing that the rectifications have been done satisfactorily and the results of the tests conducted after the rectification comply with the specified values.
16. Third party testing shall be done in an independent approved laboratory, if there is dispute due to difference in the test results of first-tier and second-tier testing or if any manipulated results are suspected. In case, certain specific tests cannot be carried out with the facilities available in the Contractor's site laboratory or the Department laboratories, third party testing shall be resorted to.
17. Executive Engineer in charge of the work shall decide whether third party testing is required to settle a dispute. This decision will be final and binding on the Contractor.
18. Third party tests, if approved by the Executive Engineer shall be arranged by the Contractor in an approved laboratory as directed by the Executive Engineer. It is desirable that the test shall be done in the presence of the Assistant Engineer/Assistant Executive Engineer and the Contractor to eliminate any further disputes. The expenses shall be met by the Contractor. The result obtained in the test shall be final and binding on both the Contractor and the Department.

Chief Engineer
Administration